

National Primary Drinking Water Standard
Comparison with DJS 2-14 Water Analysis

Contaminant	MCL or TT (mg/L)	DJS 2-14 or Fasit Block B Water Sample Analysis Results
Acrylamide	TT ¹	No Analysis
Alachlor	0.002	No Analysis
Alpha/photon emitters	15 picocuries per Liter (pCi/L)	No Analysis
Antimony	0.006	No Analysis
Arsenic	0.010	<0.005
Asbestos (fibers >10 micrometers)	7 million fibers per Liter (MFL)	No Analysis
Atrazine	0.003	No Analysis
Barium	2	0.12
Benzene	0.00500	1.51000
Benzo[a]pyrene (PAHs)	0.0002	No Analysis
Beryllium	0.004	No Analysis
Beta photon emitters	4 millirems (Gross Beta = 57 + 5.8 pCi/L)	
Bismate	0.010	No Analysis
Cadmium	0.005	No Analysis
Carbofuran	0.04	No Analysis
Carbon tetrachloride	0.005	No Analysis
Chloramines (as Cl ₂)	MROl=4.0 ²	No Analysis
Chlorane	0.002	No Analysis
Chlorine (as Cl ₂)	MROl=4.0 ²	No Analysis
Chlorine dioxide (as ClO ₂)	MROl=0.8 ³	No Analysis
Chlorite	1.0	No Analysis
Chlorobenzene	0.1	No Analysis
Chromium (total)	TT ¹ ; Action Level=1.3	No Analysis
Copper	TT ¹	No Analysis
Cryptosporidium	TT ¹	No Analysis
Cyanide (as free cyanide)	0.2	No Analysis
2,4-D	0.07	No Analysis
Dalapon	0.2	No Analysis
1,2-Dibromo-3- chloropropane	0.0002	No Analysis
D-Dichlorobenzene	0.6	No Analysis
p-Dichlorobenzene	0.075	No Analysis
1,2-Dichloroethane	0.005	No Analysis
1,1-Dichloroethylene	0.007	No Analysis
cis-1,2-Dichloroethylene	0.07	No Analysis
trans-1,2-Dichloroethylene	0.1	No Analysis
Dichloromethane	0.005	No Analysis
1,2-Dichloropropane	0.005	No Analysis
Di(2-ethylhexyl) adipate	0.4	No Analysis
Di(2-ethylhexyl) phthalate	0.006	No Analysis
Dioxins	0.007	No Analysis
Dioxin (2,3,7,8-TCDD)	0.0000003	No Analysis
Diquat	0.02	No Analysis
Endothal	0.1	No Analysis
Endrin	0.002	No Analysis
Epichlorohydrin	TT ¹	No Analysis
Ethylbenzene	0.7	0.005
Ethylene dibromide	0.00005	No Analysis
Fecal coliform and E. coli	MCL ⁴	No Analysis
Fluoride	4.0	6.48
Giardia lamblia	TT ²	No Analysis
Glyphosate	0.7	No Analysis
Halooxetic acids (HAAS)	0.060	No Analysis
Heptachlor	0.0004	No Analysis
Heptachlor epoxide	0.0002	No Analysis
Heterotrophic plate count (HPC)	TT ¹	No Analysis
Hexachlorobenzene	0.001	No Analysis
Hexachloro- cyclopentadiene	0.05	No Analysis
Lead	TT ¹ ; Action Level=0.015	No Analysis
Legionella	TT ¹	No Analysis
Udane	0.0002	No Analysis
Mercury (inorganic)	0.002	No Analysis
Methoxychlor	0.04	No Analysis
Nitrate (measured as Nitrogen)	10	< 0.2
Nitrite (measured as Nitrogen)	1	No Analysis
Quamyl (Vydate)	0.2	No Analysis
Pentachlorophenol	0.001	No Analysis
Picloram	0.5	No Analysis
Polychlorinated biphenyls (PCBs)	0.0005	No Analysis
Radium 226 and Radium 228 (combined)	5 pCi/L	No Analysis
Selenium	0.05	<0.005
Simazine	0.004	No Analysis
Styrene	0.1	No Analysis
Tetrachloroethylene	0.005	No Analysis
Thallium	0.002	No Analysis
Toluate	1	0.83
Total Coliforms	5.0 percent ⁶	No Analysis
Total Trihalomethanes (TTHMs)	0.080	No Analysis
Toxaphene	0.003	No Analysis
2,4,5-TP (Silvex)	0.05	No Analysis
1,2,4- Trichlorobenzene	0.07	No Analysis
1,1,1- Trichloroethane	0.2	No Analysis
1,1,2- Trichloroethane	0.005	No Analysis
Trichloroethylene	0.005	No Analysis
Turbidity	TT ¹	No Analysis
Uranium	30ug/L	<5 ug/L
Vinyl chloride	0.002	No Analysis
Viruses (enteric)	TT ¹	No Analysis
Viruses (total)	10	0.39

Potential health effects from long-term exposure above the MCL	Common sources of contaminant in drinking water	Public Health Goal (mg/L)
Nervous system or blood problems; increased risk of cancer	Added to water during sewage/ wastewater treatment	zero
Eye, liver, kidney, or spleen problems; anemia; increased risk of cancer	Runoff from herbicide used on row crops	zero
Increased risk of cancer	Erosion of natural deposits of certain minerals that are radioactive and may emit a form of radiation known as alpha radiation	zero
Increase in blood cholesterol; decrease in blood sugar	Discharge from petroleum refineries; fire retardants;	0.006
Skin damage or problems with circulatory system, and may have increased risk of getting cancer	Erosion of natural deposits; runoff from orchards;	0
Increased risk of developing benign intestinal polyps	Decay of asbestos cement in water mains; erosion of natural deposits	7 MFL
Cardiovascular system or reproductive problems	Runoff from herbicide used on row crops	0.003
Increase in blood pressure	Discharge of drilling wastes; discharge from metal	2
Anemia; decrease in blood platelets; increased risk of cancer	Discharge from factories; leaching from gas storage	zero
Reproductive difficulties; increased risk of cancer	Leaching from linings of water storage tanks and	zero
Infestinal lesions	Discharge from metal refineries and coal burning	0.004
Increased risk of cancer	Decay of natural and man-made deposits of certain minerals that are radioactive and may emit forms of radiation known as photons and beta radiation	zero
Increased risk of cancer	Byproduct of drinking water disinfection	zero
Kidney damage	Corrosion of galvanized pipes; erosion of natural	0.005
Problems with blood, nervous system, or reproductive system	Leaching of soil fumigant used on rice and alfalfa	0.04
Liver problems; increased risk of cancer	Discharge from chemical plants and other industrial	zero
Eye/nose irritation; stomach discomfort; anemia	Water additive used to control microbes	MROlG=6
Liver or nervous system problems; increased risk of	Residue of banned termiticide	zero
Eye/nose irritation; stomach discomfort	Water additive used to control microbes	MROlG=6
Anemia; infants, young children, and fetuses of	Water additive used to control microbes	MROlG=0.8
Anemia; infants, young children, and fetuses of	Byproduct of drinking water disinfection	0.8
Liver or kidney problems	Discharge from chemical and agricultural chemical	0.1
Allergic dermatitis	Discharge from steel and pulp mills; erosion of	0.1
Short-term exposure: Gastrointestinal distress. Long-term exposure: Liver or kidney damage. People with	Corrosion of household plumbing systems; erosion of natural deposits	1.3
Short-term exposure: Gastrointestinal illness (e.g.,	Human and animal fecal waste	zero
Nerve damage or thyroid problems	Discharge from steel/metal factories; discharge from plastic and fertilizer factories	0.2
Kidney, liver, or adrenal gland problems	Runoff from herbicide used on row crops	0.07
Minor kidney changes	Runoff from herbicide used on rights of way	0.2
Reproductive difficulties; increased risk of cancer	Runoff/leaching from soil fumigant used on	zero
Liver, kidney, or circulatory system problems	Discharge from industrial chemical factories	0.6
Anemia; liver, kidney, or spleen damage; changes in	Discharge from industrial chemical factories	0.075
Increased risk of cancer	Discharge from industrial chemical factories	zero
Liver problems	Discharge from industrial chemical factories	0.007
Liver problems	Discharge from industrial chemical factories	0.07
Liver problems; increased risk of cancer	Discharge from industrial chemical factories	0.1
Increased risk of cancer	Discharge from industrial chemical factories	zero
Weight loss, liver problems, or possible reproductive	Discharge from chemical factories	0.4
Reproductive difficulties; liver problems; increased	Discharge from rubber and chemical factories	zero
Reproductive difficulties	Runoff from herbicide used on soybeans and	0.007
Reproductive difficulties; increased risk of cancer	Emissions from waste incineration and other	zero
Cataracts	Runoff from herbicide use	0.02
Stomach and intestinal problems	Runoff from herbicide use	0.1
Liver problems	Residue of banned insecticide	0.002
Increased cancer risk; stomach problems	Discharge from industrial chemical factories; an	zero
Liver or kidney problems	Discharge from petroleum refineries	0.7
Problems with liver, stomach, reproductive system, or	Discharge from petroleum refineries	zero
Fecal coliforms and E. coli are bacteria whose	Human and animal fecal waste	zero ¹⁰
presence indicates that the water may be		
Bone disease (pain and tenderness of the bones)	Water additive which promotes strong teeth; erosion	4.0
Short-term exposure: Gastrointestinal illness	Human and animal fecal waste	zero
Kidney problems; reproductive difficulties	Runoff from herbicide use	0.7
Increased risk of cancer	Byproduct of drinking water disinfection	n/a ⁹
Liver damage; increased risk of cancer	Residue of banned termiticide	zero
Liver damage; increased risk of cancer	Breakdown of heptachlor	zero
HPC has no health effects; it is an analytic method used to measure the variety of bacteria	HPC measures a range of bacteria that are naturally present in the environment	n/a
Liver or kidney problems; reproductive	Discharge from metal refineries and agricultural	zero
Kidney or stomach problems	Discharge from chemical factories	0.05
Infants and children: Delay in physical or mental development; children could show slight deficit in attention span and learning abilities; Adults: Kidney problems; high blood pressure	Corrosion of household plumbing systems; erosion of natural deposits	zero
Legionnaire's Disease, a type of pneumonia	Found naturally in water; multiplies in heating	zero
Liver or kidney problems	Runoff/leaching from insecticide used on cattle;	0.0002
Kidney damage	Erosion of natural deposits; discharge from	0.002
Reproductive difficulties	Runoff/leaching from insecticide used on fruits;	0.04
Infants below the age of six months who drink water containing nitrate in excess of the MCL; Infants below the age of six months who drink water containing nitrite in excess of the MCL	Runoff from fertilizer use; leaching from septic tanks; sewage; erosion of natural deposits	10
Slight nervous system effects	Runoff from fertilizer use; leaching from septic tanks; sewage; erosion of natural deposits	1
Liver or kidney problems; increased cancer risk	Runoff/leaching from insecticide used on apples;	0.2
Liver problems	Discharge from wood-preserving factories	zero
Skin changes; thymus gland problems; immune deficiencies; reproductive or nervous system	Herbicide runoff	0.5
Increased risk of cancer	Runoff from landfills; discharge of waste chemicals;	zero
Hair or fingernail loss; numbness in fingers or	Erosion of natural deposits	zero
Problems with blood	Discharge from petroleum and metal refineries;	0.05
Liver, kidney, or circulatory system problems	Herbicide runoff	0.004
Increased risk of cancer	Discharge from rubber and plastic factories; leaching	0.1
Hair loss; changes in blood; kidney, intestine, or	Discharge from factories and dry cleaners	zero
Nervous system; kidney, or liver problems	Leaching from ore-processing sites; discharge from	0.0005
Coliforms are bacteria that indicate that other, potentially harmful bacteria may be present. See	Discharge from petroleum factories	1
Liver, kidney, or central nervous system problems; increased risk of cancer	naturally present in the environment	zero
Kidney, liver, or thyroid problems; increased risk	Byproduct of drinking water disinfection	n/a ⁹
Liver problems	Runoff/leaching from insecticide used on cotton and	zero
Changes in adrenal glands	Residue of banned herbicide	0.05
	Discharge from textile finishing factories	0.07
Liver, nervous system, or circulatory problems	Discharge from metal degreasing sites and other factories	0.2
Liver, kidney, or immune system problems	Discharge from industrial chemical factories	0.003
Liver problems; increased risk of cancer	Discharge from metal degreasing sites and	zero
Turbidity is a measure of the cloudiness of water. It is used to indicate water quality and filtration effectiveness (e.g., whether disease	Soil runoff	n/a
Increased risk of cancer; kidney toxicity	Erosion of natural deposits	zero
Increased risk of cancer	Leaching from PVC pipes; discharge from	zero
Short-term exposure: Gastrointestinal illness (e.g., diarrhea, vomiting, cramps)	Human and animal fecal waste	zero
Nervous system damage	Discharge from petroleum factories;	10

LEGEND

DISINFECTANT

DISINFECTION BYPRODUCT

INORGANIC CHEMICAL

MICROORGANISM

ORGANIC CHEMICAL

RADIOISOTOPES

NOTES

1 Definitions

- **Maximum Contaminant Level Goal (MCLG)** The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety and are non-enforceable public health goals.
- **Maximum Contaminant Level (MCL)** The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to MCLGs as feasible using the best available treatment technology and taking cost into consideration. MCLs are enforceable standards.
- **Maximum Residual Disinfectant Level Goal (MRDLG)** The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.
- **Maximum Residual Disinfectant Level (MRDL)** The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.
- **Treatment Technique (TT)** A required process intended to reduce the level of a contaminant in drinking water.

2 Units are in milligrams per liter (mg/L) unless otherwise noted. Milligrams per liter are equivalent to parts per million (ppm).

3 Health effects are from long term exposure unless specified as short-term exposure.

4 Each water system must certify annually, in writing, to the state (using third party or manufacturers certification) that when it uses arsenic and/or picosporins to treat water, the combination (or product) of dose and monomer level does not exceed the levels specified, as follows: Arsenic = 0.05 percent dosed at 1 mg/L (or equivalent); Picosporins = 0.01 percent dosed at 20 mg/L (or equivalent).

5 Lead and copper are regulated by a Treatment Technique that requires systems to control the concentration of their water. If more than 10 percent of tap water samples exceed the action level, water systems must take additional steps. For copper, the action level is 1.3 mg/L, and for lead is 0.015 mg/L.

6 A routine sample that is total coliform positive or E. coli positive triggers repeat samples.

7 If any repeat sample is total coliform positive, the system has an acute MCL violation. A routine sample that is total coliform positive and fecal coliform negative or E. coli negative triggers repeat samples; if any repeat sample is fecal coliform positive or E. coli positive, the system has an acute MCL violation. See also Total Coliforms.

8 70% of surface water treatment rules require systems using surface water or ground water under the direct influence of surface water to (1) protect their water, and (2) filter their water to meet criteria for avoiding filtration so that the following contaminants are controlled at the following levels:

- **Cryptosporidium**: 99 percent removal for systems that filter. Unfiltered systems are required to include Cryptosporidium in their existing watershed control programs.

- **Clostridium**: 99.9 percent removal/inactivation
- **Disinfectant**: 99.9 percent removal/inactivation
- **Legionella**: No limit, but EPA believes that *Legionella* and other are removed/inactivated, according to the treatment technology in the surface water treatment technology will also be controlled.
- **Turbidity**: For systems that use conventional or direct filtration, at no time can turbidity (cloudiness of water) get higher than 1 nephelometric turbidity unit (NTU), and samples for turbidity must be less than or equal to 0.3 NTU in at least 95 percent of the samples in any month. Systems that use filtration other than the conventional or direct filtration must follow state laws, which must include turbidity at no time exceeding 1 NTU.
- **MCL**: No more than 500 bacterial colonies per milliliter
- **Long Term 1 Enhanced Surface Water Treatment** Surface water systems or ground water systems under the direct influence of surface water serving fewer than 10,000 people must comply with the applicable Long Term 1 Enhanced Surface Water Treatment Rule provisions (e.g. turbidity standards, individual filter monitoring, Cryptosporidium removal requirements, watershed watershed control requirements for unfiltered systems).
- **Long Term 2 Enhanced Surface Water Treatment** This rule applies to all surface water systems or ground water systems under the direct influence of surface water. The rule requires additional Cryptosporidium treatment requirements for higher risk systems and includes provisions to reduce risks from uncontrolled finished water storage facilities and to ensure that the systems maintain microbial protection as they take steps to reduce the formation of disinfection byproducts. Monitoring and data are triggered by system size. The largest systems (serving at least 100,000 people) will begin monitoring in October 2008 and the smallest systems (serving fewer than 10,000 people) will not begin monitoring until October 2018. After completing monitoring and determining their treatment plan, systems generally have three years to comply with any additional treatment requirements.)
- **Filter Backwash Recycling** The Filter Backwash Recycling Rule requires systems that recycle to return specific recycle flows through all processes of the system's existing conventional or direct filtration system or at an alternate location approved by the state.
- **No more than 5.0 percent samples total coliform positive in a month.** (For water systems that collect fewer than 40 routine samples per month, no more than one sample can be total coliform positive per month.) Every sample that has total coliform must be analyzed for either fecal coliforms or E. coli. If consecutive TC positive samples, and one is also positive for E. coli or fecal coliforms, system has an acute MCL violation.
- **Although there is no collective MCLG for this contaminant group, there are individual MCLGs for some of the individual contaminants:**
 - **Hexachloro acid:** dichloroacetic acid (DCA), trichloroacetic acid (TCA) and (DCA, TCA)
 - **Trichloroethylene:** trichloroethylene (TCE), trichloroethylene (TCE), trichloroethylene (TCE), trichloroethylene (TCE)

NATIONAL SECONDARY DRINKING WATER REGULATION

National Secondary Drinking Water Regulations are non-enforceable guidelines regarding contaminants that may cause cosmetic effects (such as skin or tooth discoloration) or aesthetic effects (such as taste, odor, or color) in drinking water. EPA recommends secondary standards to water systems but does not require systems to comply. However, some states may choose to adopt them as enforceable standards.

Contaminant	Secondary Maximum Contaminant Level (mg/L)	DIS 2-14 / Fault Block 4 Water Analysis Results	
Aluminum	0.05 to 0.2 mg/L	1.12	
Chloride	250 mg/L	205	
Color	15 (color units)	Not Analyzed	
Copper	1.0 mg/L	Not Analyzed	
Corrosivity	Noncorrosive	Not Analyzed	
Fluoride	2.0 mg/L	6.88	
Foaming Agents	0.5 mg/L	Not Analyzed	
Iron	0.3 mg/L	11.9	
Manganese	0.05 mg/L	0.128	
Odor	3 threshold odor number	Not Analyzed	
pH	6.5-8.5	6.8	
Silver	0.10 mg/L	Not Analyzed	
Sulfate	250 mg/L	34	
Total Dissolved Solids	500 mg/L	1540	
Zinc	5 mg/L	Not Analyzed	

FOR MORE INFORMATION ON EPA'S SAFE DRINKING WATER:

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